CETCO

COLLOID ENVIRONMENTAL TECHNOLOGIES COMPANY

TECHNICAL DATA SHEET

TR 404bm
5-1-96

BENTOMAT "ST" CERTIFIED PROPERTIES

MATERIAL PROPERTY	TEST METHOD	TEST FREQUENCY, ft^2 (m^2)	REQUIRED VALUES
Bentonite Swell Index[1]	ASTM D 5890	1 per 50 tonnes	24 mL/2g min.
Bentonite Fluid Loss	ASTM D 5891	1 per 50 tonnes	18 mL max.
Bentonite Mass/Area[2]	ASTM D 5261	40,000 ft^2 (4,000 m^2)	0.75 lb/ft^2 (3.6 kg/m^2)
GCL Grab Strength[3]	ASTM D 4632	200,000 ft^2 (20,000 m^2)	90 lbs (400 N)
GCL Grab Elongation	ASTM D 4632	200,000 ft^2 (20,000 m^2)	15 percent typical
GCL Peel Strength	ASTM D 4632	40,000 ft^2 (4,000 m^2)	15 lbs (65 N)
GCL Index Flux[4]	ASTM D 5887	Weekly	1×10^{-8} $m^3/m^2/sec$
GCL Hydrated Internal Shear Strength[5]	ASTM D 5321	Periodic	500 psf (24 kPa) typical

Bentomat "ST" is a reinforced GCL consisting of a layer of sodium bentonite between a woven and a non-woven geotextile which are needlepunched together.

Notes:

1. Bentonite property tests performed at CETCO's bentonite processing facility before shipment to CETCO's GCL production facilities.
2. Bentonite mass/area reported at 0 percent moisture content. The reported value is equivalent to 0.95 psf at 20% moisture content, the GCL industry standard.
3. All tensile testing is performed in the machine direction, with results as minimum average roll values unless otherwise indicated.
4. Index Flux with deaired distilled water at 5 psi (35 kPa) confining pressure and 2 psi (15 kPa) head pressure. Reported value is equivalent to 925 gal/acre/day. This flux value is equivalent to a permeability of 5×10^{-9} cm/sec. This flux value should not be used for equivalency calculations. A flux test using gradients that represent field conditions must be performed to determine equivalency. The last 20 values may be reported from the end of the production date of the supplied GCL.
5. Peak value measured at 200 psf (30 kPa) normal stress. Site-specific materials, GCL products, and test conditions must be used to verify internal and interface strength of the proposed design.

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BENTOMAT "DN" CERTIFIED PROPERTIES

MATERIAL PROPERTY	TEST METHOD	TEST FREQUENCY, ft^2 (m^2)	REQUIRED VALUES
Bentonite Swell Index[1]	ASTM D 5890	1 per 50 tonnes	24 mL/2g min.
Bentonite Fluid Loss	ASTM D 5891	1 per 50 tonnes	18 mL max.
Bentonite Mass/Area[2]	ASTM D 5261	40,000 ft^2 (4,000 m^2)	0.75 lb/ft^2 (3.6 kg/m^2)
GCL Grab Strength[3]	ASTM D 4632	200,000 ft^2 (20,000 m^2)	250 lbs (1,100 N)
GCL Grab Elongation	ASTM D 4632	200,000 ft^2 (20,000 m^2)	65 percent typical
GCL Peel Strength	ASTM D 4632	40,000 ft^2 (4,000 m^2)	15 lbs (65 N)
GCL Index Flux[4]	ASTM D 5887	Weekly	1×10^{-8} $m^3/m^2/sec$
GCL Hydrated Internal Shear Strength[5]	ASTM D 5321	Periodic	500 psf (24 kPa) typical

Bentomat "DN" is a reinforced GCL consisting of a layer of sodium bentonite between two non-woven geotextiles which are needlepunched together.

Notes:

1. Bentonite property tests performed at CETCO's bentonite processing facility before shipment to CETCO's GCL production facilities.
2. Bentonite mass/area reported at 0 percent moisture content. The reported value is equivalent to 0.95 psf at 20% moisture content, the GCL industry standard.
3. All tensile testing is performed in the machine direction, with results as minimum average roll values unless otherwise indicated.
4. Index Flux with deaired distilled water at 5 psi (35 kPa) confining pressure and 2 psi (15 kPa) head pressure. Reported value is equivalent to 925 gal/acre/day. This flux value is equivalent to a permeability of 5×10^{-9} cm/sec. This flux value should not be used for equivalency calculations. A flux test using gradients that represent field conditions must be performed to determine equivalency. The last 20 values may be reported from the end of the production date of the supplied GCL.
5. Peak value measured at 200 psf (30 kPa) normal stress. Site-specific materials, GCL products, and test conditions must be used to verify internal and interface strength of the proposed design.